

AMENDMENTS

Listing of Claims

The following listing of claims replaces all previous listings or versions thereof:

1. (Presently amended) AA_n isolated DNA segment encoding a ~~MURF-1~~, MURF-2 or ~~MURF-3~~-polypeptide either having:
 - (i) the amino acid sequence as set forth in SEQ ID NO:4; or
 - (ii) a variant of the amino acid sequence set forth in in SEQ ID NO:4 capable of binding a microtubule wherein the variant is encoded by a nucleic acid sequence that hybridizes to SEQ ID NO:3, from position 80 through position 1710, inclusive, under conditions of 10 mM Tris-HCl (pH 8.3), 50 mM KCl, and 1.5 μ M MgCl₂ at a temperature of 72°C.
2. (Canceled)
3. (Presently amended) The DNA segment of claim 2, wherein the ~~MURF-1~~-polypeptide ~~has the sequence of SEQ ID NO:2, the~~ MURF-2 polypeptide has the sequence of SEQ ID NO:4, ~~and the~~ ~~MURF-3~~-polypeptide ~~has the sequence of SEQ ID NO:6.~~
4. (Presently amended) The DNA segment of claim 3, wherein the ~~MURF-1~~ DNA segment ~~has the sequence of SEQ ID NO:1, the~~ MURF-2 DNA segment has the sequence of SEQ ID NO:3, ~~and the~~ ~~MURF-3~~ DNA segment ~~has the sequence of SEQ ID NO:5.~~
5. (Original) The DNA segment of claim 1, wherein the DNA segment is positioned under the control of a promoter.
6. (Presently amended) The DNA segment of claim 5, wherein the promoter is not a native MURF-1, MURF-2 or MURF-3 ~~coding region~~promoter.

7. (Canceled)
8. (Original) The DNA segment of claim 5, further comprising a polyadenylation signal.
9. (Original) The DNA segment of claim 5, further comprising an origin of replication.
10. (Presently amended) The DNA segment of claim 9, wherein the ~~vector is~~ DNA segment is comprised within a viral vector.
11. (Presently amended) The DNA segment of claim 10, wherein the ~~vector is~~ DNA segment is comprised within a non-viral vector.
12. (Presently amended) A host cell comprising a DNA segment ~~that encodes a MURF-1, MURF-2 or MURF-3 polypeptide~~ of claim 1, wherein said DNA segment comprises a promoter heterologous to the ~~MURF-1, murine MURF-2 or MURF-3~~ coding region set forth in SEQ ID NO:3.
13. (Original) The host cell of claim 12, further defined as a prokaryotic host cell.
14. (Original) The host cell of claim 12, further defined as a eukaryotic host cell.
15. (Canceled)
16. (Original) The host cell of claim 14, wherein the host cell is a secretory cell.
17. (Presently amended) The host cell of claim 15, wherein the ~~MURF-1 polypeptide has the sequence of SEQ ID NO:2, the MURF-2 polypeptide has the sequence of SEQ ID NO:4, and the MURF-3 polypeptide has the sequence of SEQ ID NO:6.~~

18. (Presently amended) A method of ~~using a host cell~~producing a MURF-2 polypeptide comprising (i) transforming a host cell with an expression cassette comprising a ~~polynucleotide encoding a MURF-1, MURF-2 or MURF-3 polypeptide~~the DNA segment of claim 1 and a promoter active in said host cell, ~~said promoter and capable of~~ directing the expression of said polypeptide, ~~said method comprising and~~ (ii) culturing the host cell under conditions suitable for the expression of the ~~MURF-1, MURF-2 or MURF-3~~ polypeptide.

19-115. (Canceled)